

Serial No. 10/092,300**Docket No.: 1567.1027****REMARKS****INTRODUCTION:**

In accordance with the foregoing, the specification has been amended to correctly refer to FIG. 14 and to correct a typographical error. Claims 7-9 and 25-31 have been cancelled without prejudice or disclaimer, claims 15-23, 32, 34 and 35 have been withdrawn, and claims 36-39 have been added. Withdrawn claims 15 and 19 have been amended to depend from claim 1 for the purposes of MPEP 809.04.

By way of clarification, while the Examiner asserts on pages 2-3 of the Office Action that the applicants have made various admissions as to the invention, the Examiner does not rely on specific statements in the specification or in the Response filed December 5, 2003 that would appear to qualify as an admission. C.f., MPEP 2129 (defining an admission in the context of prior art admissions), and MPEP 1412.01 (defining invention in terms of evidence in specification for purposes of reissue). As such, it is respectfully submitted that, even assuming arguendo that the Examiner is correct as to the number of different methods that can be used, the source of the evidence is not the instant application or the statements of the applicants in the Response.

No new matter is being presented, and approval and entry of the foregoing amendments and new claims are respectfully requested.

Claims 1-6, 10-14, 24, 33, 36 -39 are pending and under consideration.
Reconsideration is requested.

OBJECTIONS TO THE SPECIFICATION:

In the Office Action at page 4, the Examiner objects to the specification. In view of the amendment to the specification to reference FIG. 14 instead of FIG. 3, it is respectfully requested that the Examiner withdraw the objection. No new matter has been added.

REJECTION UNDER 35 U.S.C. §102:

In the Office Action at pages 4-6, the Examiner rejects claims 1-6, 10-14, 24, and 33 under 35 U.S.C. §102(b) in view of Amatucci et al. (U.S. Patent No. 5,705,291). This rejection is respectfully traversed and reconsideration is requested.

By way of review, claim 1 recites, among other features, "at least one additive compound selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonate."

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In contrast, Amatucci et al. teaches coating LiMn_2O_4 particulates with a thin film to reduce the contact between an electrolyte and a surface of the LiMn_2O_4 particulate. The thin film is used to prevent self-discharge of the lithium battery during storage by limiting the active surface area of the LiMn_2O_4 particulate. The thin film itself is of boron oxide, boric acid, lithium hydroxide, aluminum oxide, lithium aluminate, lithium metaborate, silicon dioxide, and/or lithium silicate. (Col. 1, line 66 to col. 2, line 4, col. 3, lines 49-55). There is no suggestion that the thin film includes either an oxyhydroxide, an oxycarbonate, or a hydroxycarbonate having the properties recited in claim 1.

Further, while Amatucci et al. suggests using a lithium hydroxide, there is no suggestion that lithium is thermally absorbent. In contrast, claim 1 recites the hydroxide being of a thermal-absorbent element. As such, it is respectfully submitted that Amatucci et al. does not disclose the invention recited in claim 1.

Additionally, while Amatucci et al. vaguely sets forth that borate, lithiated borate, aluminate, lithiated aluminate, silicate, or lithiated silicate may be used in col. 2, lines 5-17 and col. 4, lines 13-28, Amatucci et al. actually teaches that the thin film is of boron oxide, boric acid, lithium hydroxide, aluminum oxide, lithium aluminate, lithium metaborate, silicon dioxide, and/or lithium silicate. Moreover, since borate, aluminate, lithiated aluminate, silicate, and/or lithiated silicate are each large classes of compounds, one of ordinary skill in the art would not immediately determine from these vague references that Amatucci et al. discloses the recited invention. MPEP 2131.02. As such, it is respectfully submitted that Amatucci et al. does not disclose the invention of claim 1.

Similarly, Amatucci et al. discloses the use of boron oxide and boric acid in the thin film. However, Amatucci et al. does not suggest "at least one additive compound selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonate," where the thermal-absorbent element is B as recited in claim 10.

Additionally, Amatucci et al. discloses the use of aluminum oxide and lithium aluminate in the thin film. However, Amatucci et al. does not suggest "at least one additive compound selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonate," where the thermal-absorbent element is Al as recited in claim 10. As such, it is respectfully submitted that Amatucci et al. does not suggest the use of B or Al as recited in the invention of claim 10.

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On pages 5-6 of the Office Action, the Examiner asserts that Amatucci et al. suggests the use of H_3BO_3 and/or B_2O_3 compounds so as to disclose the thermal absorbent element recited in claims 3 and 10. However, as similarly noted above in relation to the rejection of claims 1 and 10, while Amatucci et al. does disclose the use of boric acid (H_3BO_3) and boron oxide (B_2O_3), Amatucci et al. does not disclose that the boron is otherwise used as a thermal absorbent element in the thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonate as recited in claim 3. As such, it is respectfully submitted that Amatucci et al. does not disclose the invention recited in claim 3 or the invention recited in claim 10.

On page 6 of the Office Action, the Examiner asserts that claims 5 and 13 recite merely method limitations that do not patentably distinguish over Amatucci et al. since the claims are to the product itself and not to the manner in which the product is made. As a point of clarification, while the Examiner is generally correct in that the process itself is not a limitation, it is noted that process limitations can be used to define features of the product itself. As noted in MPEP 2113, "[t]he structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product." It is respectfully submitted that the process set forth in claims 5 and 13 provides a patentable structural feature not disclosed in Amatucci. Specifically, Amatucci teaches annealing the film onto the $LiMn_2O_4$ at temperatures in excess of $400^\circ C$. Such an annealing process is described in col. 4, lines 40-43, as providing a smoother aggregate surface features for a borate overcoating which is fused to the $LiMn_2O_4$ particle. Moreover, the process of annealing appears to affect the final product. E.g., HAWLEY'S CONDENSED CHEMICAL DICTIONARY, p. 82 (1993) ("annealing" is "[m]aintenance of a glass or metal at a specified temperature for a specific length of time ... and then gradually cooling it at a predetermined rate. This treatment removes the internal strains resulting from previous operations and eliminates distortions and imperfections. A clearer, stronger, and more uniform material results.")

In contrast, drying results in the removal of liquid, but does not have such physical results as occur in annealing. E.g., HAWLEY'S CONDENSED CHEMICAL DICTIONARY, p. 446 (drying is "[r]emoval of 90-95% of the water from a material, usually through exposure to heat.") As such, it is respectfully submitted that the annealing of boron oxide, boric acid, lithium hydroxide, aluminum oxide, lithium aluminate, lithium metaborate, silicon dioxide, and/or lithium silicate at

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temperatures in excess of 400°C as disclosed in Amatucci et al. produces a thin film which does not correspond to "said additive compound is prepared by drying a liquid comprising a thermal-absorbent element or a thermal-absorbent element-included compound at a temperature ranging from at or between room temperature and 200°C for at or between 1 and 24 hours" as recited in claim 5.

For similar reasons, it is respectfully submitted that Amatucci does not disclose the invention recited in claim 13.

Claims 2, 4, 6, 11, 12, 14, 24, and 33 are deemed patentable due at least to its depending from corresponding claims 1 and 10.

PATENTABILITY OF NEW CLAIMS

Claims 36-39 are deemed patentable due at least to their depending from claim 1.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, it is respectfully submitted that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any additional fees associated with the filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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